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ABSTRACT

The School District Data Book (SDDB) of the National Center for Education Statistics contains data on over 15,000 local education agencies (LEAs) that make it possible to compare data aggregated at district, county, state, and national levels on hundreds of variables. The SDDB was used to examine differences between the Topeka (Kansas) public school district and surrounding districts to explore the hypothesis that new growth and investment in infrastructure were taking place in the city while the inner city core was in a slow decline. Comparisons with surrounding districts showed a lower child yield rate for the city schools and a substantially higher percentage of vacant housing. Topeka did not have an unusually high number of schools with high concentrations of minority students. Graphic Information System (GIS) software was also used to determine characteristics of the city schools through Census data. The MapInfo and P-Census programs were used to compile information (presented in three attached pages) on the area to be served by two projected Topeka magnet schools. The SDDB and Census-use tools give researchers new tools to analyze a host of student and household demographic variables and school district data. (Contains 4 tables.) (SLD)

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ED 462 390

# Research Applications of the National Center for Education Statistics School District Data Book: Lessons Learned from Three LEAs Across the Nation

## The Topeka Experience: Uses of the SDDB and other Census and GIS Software in District Planning

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*Presented as part of an interactive symposium session at the American Educational Research Association's (AERA) Annual Meeting, San Francisco, California, 1995.*

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## Overview of the SDDB

In July of 1994 the NCES released the SDDB on CD-ROM. Data on over 15,000 school districts is included. The SDDB incorporates a special tabulation of the 1990 US Census data aggregated at the school district, county, state, and national level. The Census data is also integrated with administrative and financial data collected by the Census Bureau for the US Department of Education. The SDDB software makes it possible to build tables comparing data aggregated at the school district, county, state, and national levels on hundreds of variables. Data can also be exported in common formats for analysis with other software such a statistical packages making it possible to study interrelationships among the many variables in the system. The SDDB also has some GIS capabilities making it possible to produce thematic maps down to the level of the individual district.

The SDDB brings unprecedented capabilities to researchers interested in analyzing a host of student and household demographic variables as well as school district administrative and financial data. Even small school districts and researchers with limited resources can conduct sophisticated demographic analyses of school districts. The SDDB will prove useful in research and policy analysis studies at all levels of government.

## Policy or Research Issues Identified for Study.

Topeka Public Schools is going through a difficult period and suffering from demographic trends which are common in urban areas. The school district boundaries have been static for nearly thirty years. New growth and investment in infrastructure is taking place in the suburbs while the inner core of the city is in a slow decline. My experiences driving around in Topeka suggested to me that the district has a growing number of unoccupied houses and that children are more evident playing outside in the suburbs. To put these "hypotheses" to the test I formulated the following questions and went to the School District Data Book for the answers.

*How does the household yield rate for Topeka Public Schools compare with that of surrounding districts?*

Top 100 D17 Households
Top 100 D022 Households with children 5-17

**Table 1**
**Household Yield Rates for Shawnee County Districts**

| This data obtained using the Profile menu option in SDDB | **Topeka Public Schools** | **Auburn Washburn** | **Shawnee Heights** | **Seaman** | **Silver Lake** |
|---|---|---|---|---|---|
| Total Households | 43061 | 7852 | 5102 | 5808 | 963 |
| Households with Children 5-17 | 10000 | 2674 | 2083 | 2191 | 349 |
| **Percent Households with Children 5-17** | 23.22% | 34.06% | 40.83% | 37.72% | 36.24% |
| **Findings:** Topeka Public Schools also has a much lower child yield rate for housing that is occupied. **Audience & Implications:** This information has been shared with the administrative cabinet. It confirms subjective impressions we had about housing trends in the urban versus suburban areas of the county. It appears that families are disproportionately choosing to live in the suburbs. | | | | | |

*How does Topeka Public Schools compare with of surrounding districts in the percent of housing units which are unoccupied?*

Top 100 D001 Occupied housing units
Top 100 D002 Unoccupied housing units

**Table 2**
**Housing Data for Shawnee County Districts**

| This data obtained using the Profile menu | Topeka Public | Auburn Washburn | Shawnee Heights | Seaman | Silver Lake |
|---|---|---|---|---|---|
| Total Housing Units | 47553 | 8328 | 5297 | 5909 | 1039 |
| Vacant Housing Units | 4297 | 533 | 142 | 151 | 42 |
| **Percent Units Vacant** | 9.04% | 6.40% | 2.68% | 2.56% | 4.04% |

**Findings:** The census data indicates that Topeka Public Schools has a substantially higher percent of vacant housing units than the surrounding districts.
**Audience & Implications:** This information has been shared with the administrative cabinet. It confirms subjective impressions we had about housing trends in the urban versus suburban areas of the county. It appears that families are disproportionately choosing to live in the suburbs.

*Does Topeka Public Schools, a district under court order to desegregate, have an unusual number of schools with a high percentage of minority students?*

Source: Common Core of Data , PCTWYT1 to WYT10 variables; subtracted percent of white students from 100 to get percent minority; caution, this procedure may be problematic due to the way Hispanics are treated in the Census.

**Table 3**
**Frequency of Schools with Various Percentages of Minority Students**

| Percent of Minority Students | Topeka Public Schools | Kansas | USA |
|---|---|---|---|
| **95% or more** | 0 | 4 | 4,405 |
| **91-95%** | 0 | 3 | 1,185 |
| **81-90%** | 0 | 2 | 2,013 |
| **66-80%** | 1 | 14 | 3,222 |
| **36-65%** | 12 | 89 | 10,819 |
| **21-35%** | 6 | 153 | 8,707 |
| **11-20%** | 12 | 165 | 8,868 |
| **6-10%** | 3 | 247 | 8,274 |
| **5% or less** | 0 | 782 | 24,266 |
| **No reported data** | 0 | 0 | 9,611 |

**Findings**: It is apparent that Topeka does not have an unusually high number of schools with high concentrations of minority students.
**Audience/Implications**: This information came to us during the final part of our district court review of our proposed desegregation plan. It might have proved useful in court at an earlier stage.

**Use of MapInfo and P-Census in Developing School Profiles based on Census Data**

The SDDB has some competition in the private sector in the area of district level analysis of Census data. In fact, if one is interested in doing school level Census reporting it is necessary to purchase a full scale Graphic Information System (GIS) software package. In Topeka we have used MapInfo to compile Census data for school profiles for all middle and high schools. This information is used during the baseline data collection phase of Kansas' Quality Performance Accreditation system. We do not do this at the elementary level since the attendance areas are two small to provide a good match to the Census block groups. Your situation may be different especially if you have large elementary schools. The best way to evaluate this is to overlay the Census block group maps over the attendance area maps and check for fit. The fit will seldom if ever be perfect and the software does some fancy mathematics to compensate.

Another use we have made of P-Census and MapInfo is to compile information on the area to be served by two magnet schools which will replace four racially identifiable elementary schools. In addition to admitting students from across the district, the magnet schools will also have an attendance zone providing automatic admission. About three fourths of the students attending the magnets will live within this magnet zone. Table 4 includes selected Census data gleaned from a printout of some 50 pages of Census data produced with MapInfo and P-Census. A few sample pages of this report are attached to this paper.

## Table 4
## 1990 Census Data for All Persons
## Profile Compiled for Proposed Magnet School Zone and Comparison Areas
## Using MapInfo and P-Census

| The magnet zone will be served by two racially balanced magnet schools replacing four racially identifiable schools. | Magnet Zone | Topeka Public Schools | Shawnee County | Kansas | USA |
|---|---|---|---|---|---|
| **Total Population** | 11,337 | 98,620 | 160,976 | 2,477,574 | 248,709,873 |
| **Percent Minority** | 50.5 | 19.3 | 14.4 | 11.5 | 24.3 |
| **Educational Attainment less than HS** | 36% | 18% | 16% | 19% | 25% |
| **Average Household Income** | $20,833 | $30,933 | $35,282 | $34,184 | Not Avail. |
| **Percent Below Poverty Level-Children <18** | 44% | 20% | 14% | 14% | 18% |
| **Speak Only English** | 89% | 95% | 96% | 94% | 86% |
| **No English or "not well"** | 2% | .64% | .58% | .88% | 3% |
| **Vacant Housing Units** | 14% | 9% | 8% | 10% | 10% |
| **Average Value of Owned Housing** | $30,316 | $52,774 | $63,178 | $61,922 | Not Avail. |

**Findings:** These Census variables show that the proposed magnet zone takes in an area of the city with relatively high concentrations of minority persons and persons of low income and education levels.
**Audience/Implications:** This data will be included in the needs assessment section of a federal grant application currently being developed to seek funds for Topeka's new magnet schools. The data provides additional that residential patterns strongly affect the makeup of school populations.

**Using Mapinfo In Studying Changes to Attendence Areas**

We have extensively used MapInfo and a similar product called MapNet to geocode students onto a district map along with their background characteristics, overlay attendance boundaries, and compile summary data on students captured within the boundaries. Once the students are geocoded on the street maps, MapInfo makes it easy to link on student ID number to bring in and thematically map virtually any student characteristic. We have used inexpensive ink-jet printers and high-dollar plotters both of which produce very impressive maps. The only advantage of the high dollar plotters is that they can be used to print large maps of about 34 by 44 inches. We used these maps last year in public forums and federal court to present our desegregation plan.

Topeka Pub. Schools Dept. of Planning, Eval., & Demographics
Data source: 1990 Census of Population and Housing
roup

| SNAPSHOT: PERSONS | Magnet Zone | | Topeka Public Schools | | All of Shawnee Cty | | Kansas | | All of U.S.A. | |
|---|---|---|---|---|---|---|---|---|---|---|
| Total Population (% base) | 11,337 | | 98,620 | | 160,976 | | 2,477,574 | | 248709873 | |
| Population/square mile | 1,790 | | 2,741 | | 293 | | 30 | | 70 | |
| Persons living in households | 10,850 | 96% | 95,433 | 97% | 156,901 | 97% | 2,394,783 | 97% | 242050161 | 97% |
| Persons in group quarters | 487 | 4% | 3,187 | 3% | 4,075 | 3% | 82,791 | 3% | 6,659,712 | 3% |
| Male | 5,516 | 49% | 46,496 | 47% | 77,410 | 48% | 1,214,860 | 49% | 121172379 | 49% |
| Female | 5,821 | 51% | 52,124 | 53% | 83,566 | 52% | 1,262,714 | 51% | 127537494 | 51% |
| Average age | 33.8 | | 37.1 | | 35.9 | | 35.5 | | 35.3 | |
| White | 6,495 | 57% | 82,487 | 84% | 141,538 | 88% | 2,233,897 | 90% | 199827064 | 80% |
| Black | 3,782 | 33% | 11,418 | 12% | 13,044 | 8% | 141,957 | 6% | 29,930,524 | 12% |
| American Indian/Eskimo/Aleut | 249 | 2% | 1,265 | 1% | 1,816 | 1% | 23,250 | .94% | 2,015,143 | .81% |
| Asian/Pacific Islander | 92 | .81% | 771 | .78% | 1,307 | .81% | 31,114 | 1% | 7,226,986 | 3% |
| Other race | 719 | 6% | 2,679 | 3% | 3,271 | 2% | 47,356 | 2% | 9,710,156 | 4% |
| Hispanic origin (any race) | 1,446 | 13% | 5,838 | 6% | 7,319 | 5% | 90,289 | 4% | 21,900,089 | 9% |
| Persons 15+ years (% base) | 8,240 | | 78,278 | | 125,713 | | 1,913,853 | | 195167742 | |
| Not presently married | 4,535 | 55% | 37,162 | 47% | 52,206 | 42% | 732,077 | 38% | 82,336,251 | 42% |
| Now married | 3,705 | 45% | 41,116 | 53% | 73,507 | 58% | 1,181,776 | 62% | 112831491 | 58% |
| Persons 3+ years (%base) | 10,758 | | 94,335 | | 154,153 | | 2,367,424 | | 237785294 | |
| In preprimary/elemen./high sch | 2,487 | 23% | 16,643 | 18% | 30,512 | 20% | 481,235 | 20% | 47,070,073 | 20% |
| In college | 442 | 4% | 6,535 | 7% | 10,170 | 7% | 187,130 | 8% | 17,917,028 | 8% |
| Not enrolled in school | 7,829 | 73% | 71,157 | 75% | 113,471 | 74% | 1,699,059 | 72% | 172798193 | 73% |
| Public school | 2,533 | 24% | 19,894 | 21% | 35,457 | 23% | 593,376 | 25% | 54,864,252 | 23% |
| Private school | 396 | 4% | 3,284 | 3% | 5,225 | 3% | 74,989 | 3% | 10,122,849 | 4% |
| Persons 25+ years (% base) | 6,877 | | 65,378 | | 104,795 | | 1,565,936 | | 158868436 | |
| By Educational Attainment: | | | | | | | | | | |
| Less than complete high school | 2,463 | 36% | 11,979 | 18% | 16,341 | 16% | 293,272 | 19% | 39,343,718 | 25% |
| High school graduate | 2,644 | 38% | 22,788 | 35% | 37,830 | 36% | 514,177 | 33% | 47,642,763 | 30% |
| Some college/college degree | 1,770 | 26% | 30,611 | 47% | 50,624 | 48% | 758,487 | 48% | 71,881,955 | 45% |
| Persons 16+ years (% base) | 8,143 | | 77,300 | | 123,599 | | 1,880,434 | | 191829271 | |
| By Employment Status: | | | | | | | | | | |
| In Armed Forces | 18 | .22% | 238 | .31% | 411 | .33% | 25,454 | 1% | 1,708,928 | .89% |
| Civilian participation rate % | 55.2 | | 64.7 | | 68.1 | | 66.3 | | 64.9 | |
| Male civilian part. rate % | 62.5 | | 71.8 | | 75.4 | | 75.5 | | 74.0 | |
| Female civilian part. rate % | 48.8 | | 58.7 | | 61.6 | | 57.9 | | 56.7 | |
| Employed | 4,097 | 50% | 47,057 | 61% | 80,143 | 65% | 1,172,214 | 62% | 115681202 | 60% |
| Unemployed | 388 | 5% | 2,807 | 4% | 3,688 | 3% | 57,772 | 3% | 7,792,248 | 4% |
| Unemployment rate % | 8.7 | | 5.6 | | 4.4 | | 4.7 | | 6.3 | |
| Male unemployment rate % | 10.6 | | 6.1 | | 4.7 | | 4.8 | | 6.4 | |
| Female unemployment rate % | 6.5 | | 5.2 | | 4.1 | | 4.6 | | 6.2 | |





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Data source: 1990 Census of Population and Housing
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| SUMMARY: POVERTY | | Magnet Zone | Topeka Public Schools | All of Shawnee Cty | Kansas | All of U.S.A. |
|---|---|---|---|---|---|---|
| Percent of group below the poverty level: | | | | | | |
| Total persons | % | 30.6 | 13.2 | 10.0 | 11.5 | 13.1 |
| Under 6 years | % | 51.0 | 20.8 | 15.2 | 16.8 | 20.1 |
| 6 to 17 years | % | 39.7 | 19.1 | 13.3 | 12.9 | 17.3 |
| 18 to 24 years | % | 41.6 | 19.1 | 15.2 | 21.7 | 19.4 |
| 25 to 34 years | % | 31.4 | 13.0 | 10.4 | 10.3 | 11.5 |
| 35 to 44 years | % | 17.7 | 9.4 | 6.9 | 6.9 | 8.6 |
| 45 to 54 years | % | 16.9 | 6.1 | 4.2 | 6.0 | 7.5 |
| 55 to 64 years | % | 20.9 | 8.2 | 6.1 | 7.7 | 9.2 |
| 65 years and over | % | 16.4 | 10.4 | 9.4 | 12.0 | 12.8 |
| Male | % | 28.2 | 11.3 | 8.7 | 10.0 | 11.5 |
| Female | % | 33.0 | 14.9 | 11.2 | 12.9 | 14.6 |
| White | % | 22.4 | 9.9 | 7.6 | 9.9 | 9.8 |
| Black | % | 45.3 | 34.1 | 32.5 | 30.0 | 29.5 |
| American Indian/Eskimo/Aleut | % | 28.6 | 28.0 | 20.3 | 21.6 | 30.9 |
| Asian/Pacific Islander | % | 39.1 | 24.4 | 20.6 | 22.2 | 14.1 |
| Other race | % | 28.2 | 18.1 | 16.3 | 21.9 | 28.2 |
| Hispanic origin (any race) | % | 35.4 | 17.4 | 15.9 | 19.7 | 25.3 |
| Total persons for whom poverty status is determined (% base) | | 10,853 | 95,666 | 157,104 | 2,391,824 | 241977859 |
| Below the poverty level: | | | | | | |
| Under 6 years | | 685 6% | 1,768 2% | 2,135 1% | 37,548 2% | 4,331,825 2% |
| 6 to 17 years | | 843 8% | 2,756 3% | 3,578 2% | 55,518 2% | 7,097,091 3% |
| 18 to 64 years | | 1,588 15% | 6,583 7% | 8,179 5% | 143,254 6% | 16,533,363 7% |
| 65 years and over | | 210 2% | 1,532 2% | 1,843 1% | 38,303 2% | 3,780,585 2% |
| Total Families (% base) | | 3,922 | 25,316 | 43,025 | 664,668 | 65,049,428 |
| Below the poverty level: | | | | | | |
| Married couple family | | 364 12% | 2,927 12% | 4,601 11% | 82,137 12% | 8,051,821 12% |
| With related children <18 | | 313 11% | 2,679 11% | 4,199 10% | 71,231 11% | 7,036,169 11% |
| Other family | | 585 20% | 1,717 7% | 2,052 5% | 27,163 4% | 3,637,531 6% |
| With related children <18 | | 491 17% | 1,494 6% | 1,810 4% | 23,967 4% | 3,158,513 5% |

Topeka Pub. Schools Dept. of Planning, Eval., & Demographics
Data source: 1990 Census of Population and Housing
roup

| EDUCATIONAL ATTAINMENT | Magnet Zone | | Topeka Public Schools | | All of Shawnee Cty | | Kansas | | All of U.S.A. | |
|---|---|---|---|---|---|---|---|---|---|---|
| Persons 25+ years (% base) | 6,877 | | 65,378 | | 104,795 | | 1,565,936 | | 158868436 | |
| Less than 9th grade | 1,024 | 15% | 4,592 | 7% | 5,989 | 6% | 120,951 | 8% | 16,502,211 | 10% |
| 9th to 12th grade/no diploma | 1,439 | 21% | 7,387 | 11% | 10,352 | 10% | 172,321 | 11% | 22,841,507 | 14% |
| High school graduate | 2,644 | 38% | 22,788 | 35% | 37,830 | 36% | 514,177 | 33% | 47,642,763 | 30% |
| Some college, no degree | 1,177 | 17% | 14,537 | 22% | 23,649 | 23% | 342,964 | 22% | 29,779,777 | 19% |
| Associate degree | 207 | 3% | 2,206 | 3% | 3,575 | 3% | 85,146 | 5% | 9,791,925 | 6% |
| Bachelor's degree | 267 | 4% | 8,989 | 14% | 15,595 | 15% | 221,016 | 14% | 20,832,567 | 13% |
| Graduate/professional degree | 119 | 2% | 4,879 | 7% | 7,805 | 7% | 109,361 | 7% | 11,477,686 | 7% |
| Less than 9th Grade (% base) | 1,024 | | 4,592 | | 5,989 | | 120,951 | | 16,502,211 | |
| White | 605 | 59% | 3,663 | 80% | 4,964 | 83% | 104,943 | 87% | 11,806,669 | 72% |
| Black | 244 | 24% | 520 | 11% | 556 | 9% | 6,534 | 5% | 2,306,445 | 14% |
| American Indian/Eskimo/Aleut | 0 | 0% | 54 | 1% | 59 | 1% | 991 | .82% | 151,214 | .92% |
| Asian/Pacific Islander | 6 | .59% | 38 | .83% | 69 | 1% | 2,289 | 2% | 557,894 | 3% |
| Other race | 169 | 17% | 317 | 7% | 341 | 6% | 6,194 | 5% | 1,679,989 | 10% |
| Hispanic origin (any race) | 276 | 27% | 625 | 14% | 674 | 11% | 9,912 | 8% | 3,445,912 | 21% |
| 9th-12th Grade/No Diploma (%) | 1,439 | | 7,387 | | 10,352 | | 172,321 | | 22,841,507 | |
| White | 809 | 56% | 5,601 | 76% | 8,405 | 81% | 148,375 | 86% | 17,355,153 | 76% |
| Black | 530 | 37% | 1,423 | 19% | 1,514 | 15% | 15,556 | 9% | 3,881,407 | 17% |
| American Indian/Eskimo/Aleut | 49 | 3% | 125 | 2% | 133 | 1% | 2,132 | 1% | 220,900 | 1% |
| Asian/Pacific Islander | 19 | 1% | 44 | .60% | 58 | .56% | 1,827 | 1% | 411,508 | 2% |
| Other race | 32 | 2% | 194 | 3% | 242 | 2% | 4,431 | 3% | 972,539 | 4% |
| Hispanic origin (any race) | 129 | 9% | 447 | 6% | 528 | 5% | 7,574 | 4% | 2,188,309 | 10% |
| High School Graduate (% base) | 2,644 | | 22,788 | | 37,830 | | 514,177 | | 47,642,763 | |
| White | 1,684 | 64% | 19,660 | 86% | 34,074 | 90% | 478,142 | 93% | 40,891,202 | 86% |
| Black | 730 | 28% | 2,144 | 9% | 2,437 | 6% | 23,367 | 5% | 4,680,594 | 10% |
| American Indian/Eskimo/Aleut | 40 | 2% | 306 | 1% | 424 | 1% | 4,269 | .83% | 313,783 | .66% |
| Asian/Pacific Islander | 0 | 0% | 73 | .32% | 133 | .35% | 2,534 | .49% | 799,206 | 2% |
| Other race | 190 | 7% | 605 | 3% | 762 | 2% | 5,865 | 1% | 957,978 | 2% |
| Hispanic origin (any race) | 293 | 11% | 1,164 | 5% | 1,482 | 4% | 11,273 | 2% | 2,419,632 | 5% |



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